

# WATER CONSERVATION NEWS

*“Building sustainability, reliability, and accountability through efficient water use”*

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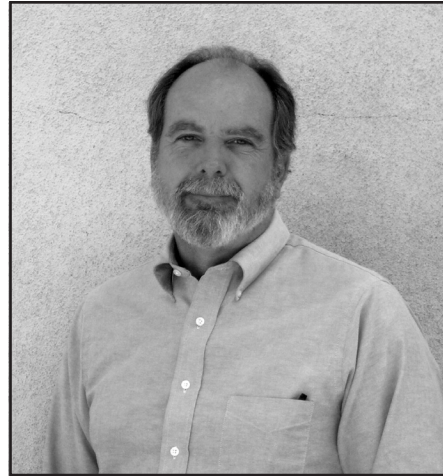
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## *Greetings from the New Chief*



It is a pleasure to be working with the dedicated and professional staff of the new combined Office of Water Use Efficiency and Transfers, and our many, local, state, statewide and federal water conservation partners. As you can tell by the new name, we have combined two offices within the Department of Water Resources into one. And, although the two previous offices sound different they both use similar analysis techniques and technology to promote using water efficiently.

Recently, our staff have been very busy reviewing desalination and urban and agricultural water use efficiency grant proposals in preparation to fund many projects across the state from Proposition 50 funds. We reviewed some great proposals in this round of funding and we are excited about getting the money on the street to make some meaningful contributions to California's water picture.

My new role as Chief of the combined office will be challenging, but also exciting. I look forward to bringing my varied 30-year experience with DWR to the team and improving and streamlining our water use efficiency, water recycling, desalination and the water transfers programs.

A handwritten signature in cursive script that reads "Bill Bennett".

William J. Bennett

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## **Office of Water Use Efficiency Mission Statement**

In cooperation with others, we promote the efficient and beneficial use of California's water resources to sustain our human and natural environment.

## Water Balance Study of the Banta-Carbona Irrigation District

By Phil Anderson



The Banta-Carbona Irrigation District is located one mile south of the City of Tracy and 16 miles west of the City of Modesto. It has approximately 14,200 irrigated acres and pumps surface water from the San Joaquin River, and a small amount of Federal water from the Delta-Mendota Canal. All district water distribution is through canals, with a high-energy usage in pumping from the San Joaquin River. About 3,200 acres are sprinkler or drip irrigated; the remaining acreage is furrow irrigated. All surface runoff is recirculated within the district. The New Jerusalem Drainage District that underlies a portion of the district directly discharges 4,000 acre-feet of tile water annually into the San Joaquin River. Other subsurface water flows into the river as accretions.

The water balance results, which pertain to the inflows to and outflows from the Banta-Carbona Irrigation District in 2002 are listed below.

- The total inflows for the study year were 62,500 acre-feet at plus or minus 2,500 acre-feet and the breakdown of inflows from various sources was: the San Joaquin River Diversions 70 percent, Supplemental Pumped Groundwater 2 percent, Precipitation 24 percent, and Delta-Mendota Canal Diversions were 4 percent.
- The total outflow was 62,500 acre-feet at plus or minus 5,300 acre-feet and the break-down of outflows to various outlets such as: deliveries to turnouts outside of the district 2 percent, surface and subsurface discharge to the San Joaquin River 22 percent, evapotranspiration 67 percent. The main cause of inefficiency within the district was identified as excess deep percolation on-farm. The study also pointed out that it appears that tile drainage discharges (point source) are considerably less than previously report-

ed and that non-point accretions can be much more significant than point source tile drainage.

The Banta-Carbona Irrigation District Modernization Feasibility study was funded by a Proposition 13 Agricultural Water Conservation Grant from the Department of Water Resources.

The information gathered during the study enlightened district staff and directors as to where real potential lies in modernizing district facilities as well as on-farm irrigation facilities. This feasibility study points out irrigation water can be conserved by minimizing deep percolation and by distributing irrigation water more evenly over a field. Providing water service that will accommodate on-farm irrigation improvements will ultimately result in "more crop per drop," which is the true measure of the efficiency of resource utilization.

The first task of this contract was the Project Organization and District Water Assessment; which required the follow 9 activities:

- Determining the district boundaries and field.
- Assessing cropped acreage.
- Determining surface water inflows.
- Determining precipitation.
- Determining Evapotranspiration from fields
- Determining ET from canals, drains and non-agricultural areas.
- Determining tile drainage outflow through the New Jerusalem Drain.
- Determining reverse flow in the Main Lift Canal.
- Determining salt balance.

This feasibility study provided 10 specific recommendations for infrastructure and operations improvement. This task required the following activities:

- Modifying the Main Lift Canal system so that it can accommodate time-of-use pumping by farmers, as well as provide greater flexibility to the laterals.
- Installing long-crested weirs in the lateral canals.
- Removing the flow rate bottleneck for

the Peterman Lateral.

- Removing a bottleneck at the head of the Clever Lateral.
- Examining and removing other bottlenecks.
- Modifying Kasson District Structures.
- Interconnecting the Westside laterals and install a new regulating reservoir.
- Adjusting the ballasting of the two Neyrtec structures.
- Examining how to supply the tail ends of Lateral 2N with water from the Clever Drain.
- Installing permanent hydro-acoustic flow meters at the fish screen.

A key tool for evaluating the impact of various modernization/intervention actions is a good flow measurement device at the San Joaquin river entrance to the Main Lift Canal. During the feasibility study a MGD acoustic-doppler flow meter was installed in one of the bays. In the past two years, there have been major improvements in the hardware and usage/calibration of hydro-acoustic flow measurement devices.

Since on-farm irrigation equipment can in most cases improve crop production, farmers are inclined to want to use the technology. When a farmer pays more for water to be conveyed to him, it diminishes the amount of capital he has to invest in on-farm irrigation equipment. Even with those challenges the district continues to look for ways to make it easier and more attractive for farmers to purchase irrigation equipment that contributes to the farmers' ultimate success at increasing crop yields which results in improved irrigation efficiency.

For additional information, please contact Phil Anderson, DWR, at (916) 651-9663, or David Weisenberger, General Manager of the Banta-Carbona Irrigation District, at (209) 835-4670.

*Final Report by: Irrigation Training and Research Center of California Polytechnic State University of San Luis Obispo and the Banta-Carbona Irrigation District*



## Soft Path a Concrete Idea

By Mark Roberson

Should water use efficiency money be invested in soft path or hard path actions? That depends on who you ask and your objective.

At the state level, a hard path action would mean investing in centralized surface storage or conveyance structures. A soft path action would be improving local infrastructure or management changes that affect the availability and quantity of supply. From a water supplier's perspective, a hard path action would be local construction of a canal or other structure. A soft path action would be capital improvement or policy changes.

Ultimately, the objective of an agricultural water supplier is customer service –



providing water in a cost-effective manner at the rate, duration, and frequency needed to make economic use of the supply. Current trends for agricultural water suppliers are to use hard path actions such as system control and data acquisition (SCADA), regulating reservoirs, lateral interceptors and spill recovery to provide better customer service. Where the limiting factor is water supply availability, it makes sense to develop local and centralized supplies or water transfers to meet demands. For suppliers that have an adequate water supply to meet crop needs, using soft path actions is a better way to match supply with demands.

Greater water supply at the diversion point is only useful if a supplier can physically make use of the water. Growers are moving to a higher level of irrigation water management and in many instances also upgrading their hardware. To optimize

water use efficiency, the supplier and customer must be compatible. For example, micro-irrigation has demonstrated significant potential for improved water use efficiency. However, for water suppliers that traditionally deliver on a fixed rotation or on a minimum flow rate or duration, this would not be a match. To provide the change in service, the water supplier must make infrastructure or policy changes that allow the end user to obtain a higher water use efficiency potential from their new hardware or management. For most growers, the key to water use efficiency is delivery flexibility. The technical knowledge on how to make use of a flexible supply is generally well understood.



## Going Green in State Buildings

By Julie Saare-Edmonds

The Office of Water Use Efficiency and Transfers has been active for more than three years in a program to advance sustainable building practices in state buildings. Originally formed as a workgroup to incorporate sustainable or “green” building features in the Capitol East End Complex, the Sustainable Building Task Force and Technical Group developed guide-



lines for using sustainable building practices in new construction and during the retrofit of existing state buildings. Some of these practices include using high-recycled content building materials, low emission paint, carpet and furniture, energy and water efficiency, natural daylighting, improved ventilation and many

other methods to improve efficiency and occupant comfort. OWUET is advocating efficient plumbing fixtures such as dual flush toilets, zero consumption urinals, low flow and auto shutoff faucets as well as water efficient landscaping and recycled water use. The use of efficient kitchen and laundry equipment is also emphasized.



Currently, the Task Force and Executive Order Working Groups are working towards implementing Executive Order S-20-04 signed by Governor Schwarzenegger in December 2004. This Executive Order requires taking all steps necessary to achieve the highest possible and cost effective increase in energy and resource efficiency. This to achieve a Leadership in Energy and Environmental Design Silver or better rating on all new or renovated state buildings.

DWR and OWUET is working with the Department of General Services to ensure that the Capitol West End Project will be built with the most up to date water and energy efficient technology available. This planned complex has a completion date of 2010.



## AB 2717 Task Force Update

By Julie Saare-Edmonds

In February 2005 the AB 2717 Landscape Task Force met for the first time in Sacramento. The purpose of the Task Force and Technical Work Groups is to re-examine the existing Model Water Efficient Landscape Ordinance and other aspects of landscape water use and make recommendations that will improve landscape water use efficiency. After the introductory Task Force meeting, the Technical Work Groups began meeting to discuss the specific issues involved.



**Work Group One** focuses on water supply, planning, implementation, enforcement and coordination. Overcoming conflicts and improved communication are also important components of the Work Group One efforts.

**Work Group Two** focuses on soils and irrigation. This work group will examine advances in irrigation technology, labeling and performance standards of irrigation equipment, irrigation efficiency and scheduling, system design and maintenance and non-potable water use. The work group will also examine cultural practices involving soil.



**Work Group Three** is looking at issues related to landscape design, plants and turfgrass. Specifically they will be discussing plant selection, water use, design considerations and climatic factors. This

## *The Clock is Running: 2005 Urban Water Management Plan Updates Due Soon*



Just a reminder, the 2005 Urban Water Management Plan Updates are due December 31, 2005. Urban water suppliers are required to update their plans at least once every five years on or before December 31, in years ending in five and zero. Approximately 413 urban water suppliers were required to file 2000 Urban Water Management Plans, and of those, 349 (84 percent) filed an UWMP. As of April 1, 2005, 194 (47 percent) UWMPs were identified by DWR as complete.

Urban Water Management Plans are reviewed by DWR staff to determine whether or not they are complete and consistent with Water Code §10631. Agencies subject to the Urban Water Management Planning Act must have adopted a complete plan that meets the requirements of the law and submitted it to DWR to be eligible for drought assistance or funds received through DWR. Results are provided to urban water suppliers through a review letter.

It is anticipated that a greater number of UWMPs will be received during the 2005 UWMP cycle than the 2000 UWMP cycle. It is also expected that a portion of all the plans will be identi-

fied by DWR reviewers as not complete and that one or more revision of those plans will be necessary before they can be identified as complete. Each revision will lengthen the time required for the review process, therefore it is to the advantage of suppliers planning to submit grant applications for future funding cycles to file as early as possible to allow time for review and any necessary revision of their UWMP. Filing early will help insure that they have a complete UWMP and are eligible to receive future grants or loans.

DWR provides technical assistance to urban water suppliers to help them meet the requirements of the Act. Program staff provides information on how to prepare water management plans, implement water conservation programs, and understand the requirements of the Act. The DWR Office of Water Use Efficiency and Transfers has updated the UWMP Worksheets and Demand Management Measure Worksheets for the 2005. They are posted at [www.owue.water.ca.gov](http://www.owue.water.ca.gov).

Contact David Todd at (916) 651-7027 or [dtodd@water.ca.gov](mailto:dtodd@water.ca.gov) or Chris Fakunding at (916) 651-9673 or [cfakund@water.ca.gov](mailto:cfakund@water.ca.gov).

group will also be evaluating measurement methods and case studies.

**Work Group Four** is studying the economics of water use and conservation, rate structures, environmental costs and benefits, environmental justice and social impacts.

The final report from the Task Force is due to the Governor and the Legislature by December 31, 2005. For more informa-

tion about the AB2717 Stakeholder Task Force and Technical Work Groups see the California Urban Water Conservation Council Web site at: [www.cuwcc.org](http://www.cuwcc.org). Click on the AB2717 Landscape Task Force logo on the home page.

## ***Prop 50 Grant Program Funds New Agricultural and Urban Water Use Efficiency Projects***

*By Baryohay Davidoff*

Implementing efficiency measures is critical for meeting the growing demand for water as California's population increases. These efficiency measures are even more critical and necessary to stretch existing limited water supplies.

To help implement efficiency measures and further advance management of water by agricultural and urban water users, California voters have passed Proposition 50 to provide grants for implementation of new water use efficiency projects—\$34 million were available as grants for fiscal year 2004-05. To meet the Water Use Efficiency Objectives, as detailed in the CALFED's 2000 Record of Decision, DWR solicited agricultural and urban water use efficiency project for two types of projects.

- Implementation projects providing direct benefit to the Bay Delta.
- Projects that included research and development, feasibility studies, pilot, or demonstration projects, training, education or public outreach programs, or technical assistance program related to water use efficiency.

As a result of a Proposal Solicitation Package, released on November 15, 2004, with a deadline of January 11, 2005, DWR received 168 eligible proposals requesting a total of about \$140 million to implement agricultural and urban efficiency projects, research and demonstration, training, education, outreach projects, technical

assistance, feasibility and pilot projects, investigation of new technologies, methodologies, and new and innovative water management practices. These proposals are posted on: [www.owue.water.ca.gov/finance/index.cfm](http://www.owue.water.ca.gov/finance/index.cfm)

Eligible proposals were then reviewed and evaluated to determine which projects would be funded with the limited \$33 million available. The task of review and

evaluation fell on the shoulders of about 52 individuals from local, State, and Federal agencies, environmental interests, and others. Five agricultural and eight urban panels along with an economic panel, and a science panel evaluated and scored all proposals according criteria detailed in the PSP. Following this, an interagency

team consisting of representatives from DWR, USBR, SWRCB, and CALFED recommended which project may be funded with limited funds. Special consideration was given to projects that represent different geographical areas, and different categories for implementation, studies, technical assistance, demonstration, pilot projects, education and training as detailed in the PSP.

The review and selection process resulted in recommendation to fund a total of 72 projects, 27 agricultural and 45 urban project totaling \$11,237,791 and \$16,895,191 respectively. Local matching funds added to about \$5.2 and \$16.9 million for agricultural and urban projects respectively. A list of the recommended for funding projects can be found at [www.owue.water.ca.gov/finance/index.cfm](http://www.owue.water.ca.gov/finance/index.cfm).

Thank you to the technical reviewers, economics and science team, as well as Agency Team members for their hard work

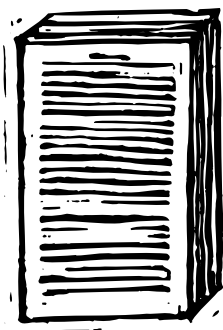
### ***General Information on Funding Distribution***

The Prop 50 recommendations will fund 10 Section A and 17 Section B agricultural projects, as well as 22 Section A and 23 Section B projects. The contracting process will begin in late June, but it may be 4 to 6 months before a signed contract is in place.

#### **Project Distribution**

AREA	AG	URBAN
Bay Area	1	9
Sacramento Valley	13	3
San Joaquin Valley	9	4
Southern California		19
Statewide	4	10

to make this Prop 50 funding cycle possible. For additional information, contact Baryohay Davidoff at (916) 651-9666, email [baryohay@water.ca.gov](mailto:baryohay@water.ca.gov).



## Uses for CIMIS

By CIMIS Staff

When the CIMIS weather station network began in 1982, the primary purpose of CIMIS was to provide free information useful in estimating crop water use for irrigation scheduling to the public. Although irrigation scheduling and evapotranspiration



data continues to be the main use of CIMIS, the uses of its other weather data have been constantly expanding over the years. At present, there are approximately 7,000 registered CIMIS users from diverse backgrounds accessing the CIMIS computer directly. Based upon web trends'

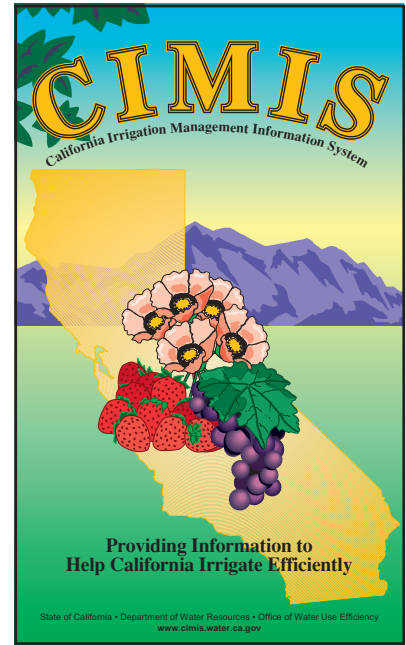
tracking it is estimated that on average, requests for CIMIS information on the internet total about 2,000,000 per year. There are also many secondary suppliers of CIMIS weather data, such as other web sites, radio, newspapers, consultants, and local water agencies.

The availability of hourly, daily and monthly weather data from CIMIS has greatly improved the flexibility of data applications for a myriad of business functions. Some of the broader applications we are seeing are a greater CIMIS presence in the planning and managing of resources. These resources include not only water use, but

also water quality, planning water balances, water shed maintenance, air resources monitoring and prediction, and forestry management. Modeling is becoming ever more important with CIMIS data being automatically downloaded into degree-day, pest management, and plant and weather models. These uses are being applied at the local, regional, State, Federal agency's level.

Some examples of CIMIS uses include:

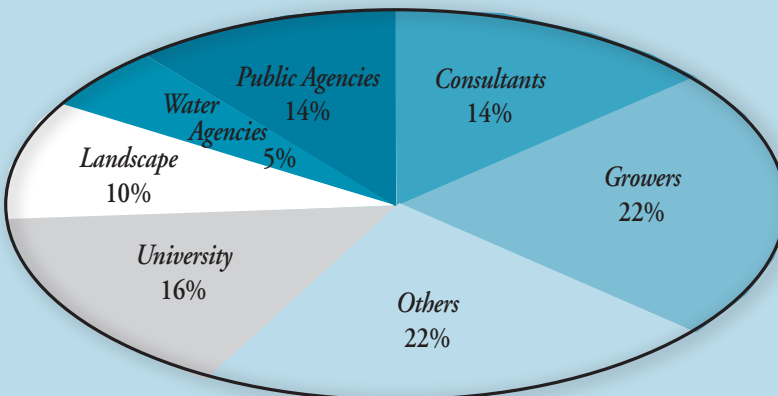
- Farm commodity purchasers for predicting product quality
- Pesticide applicators for weather prediction and documentation
- Waste water facilities planning and management
- Local and state water planners and managers
- Legal and insurance firms for documentation and litigation
- High schools for educational purposes
- Homeowner associations for water conservation
- Air quality monitoring assistance
- Federal agencies for resource management and studies
- Users from other countries for planning and development of similar networks
- California state departments providing public assistance and water use planning
- Automated severe weather warning systems
- Solar and wind power design
- Hydrological modeling for water availability and groundwater recharge



To order the CIMIS brochures, visit [www.cimis.water.ca.gov](http://www.cimis.water.ca.gov) or contact Kent Frame at [kframe@water.ca.gov](mailto:kframe@water.ca.gov).

- University of California Integrated Pest Management Project for degree-day calculations and pest and plant modeling
- Urban landscape planning and managing

Because of the many diverse applications of CIMIS data, increased usership, and the evolving way data is handled, the development of new programs, data collection methods and useful dissemination platforms become increasingly important.



### CIMIS Main User Categories

This chart represents 26 sub-groups of users compiled into seven main user categories and their percent to the total number of CIMIS users. When users register they indicate which of the 26 sub-groups best represents them.



## CALIFORNIA URBAN WATER CONSERVATION COUNCIL

### *Want to be Part of a National Organization?*

*By Mary Ann Dickinson*

Are you envious of the large number of national organizations that exist to help in promoting energy efficiency? Have you ever wondered why no such national organization exists to promote water efficiency? Well, wonder no more.

The California Urban Water Conservation Council is developing the framework for a national partnership on water use efficiency—similar to the Consortium for Energy Efficiency. We all need a nationwide water efficiency organization that can develop cross-state initiatives, conduct needed water efficiency research, coordinate water efficiency project partners, and in general serve as a clearinghouse for water efficiency progress and cutting-edge change. The US Environmental Protection Agency agrees, and has given the Council a grant to coordinate this project.

To design a program that best meets the needs of the water and related industries, the Council will seek information in a variety of ways:

- conducting stakeholder workshops throughout the country to listen to potential partners to learn what is important to them;
- conducting a nationwide survey of stakeholders through the internet;
- inventorying existing water efficiency organizations on a local and regional basis and learning from their experiences;
- conducting three specialized focus groups to get feedback on proposed designs for the national organization;
- writing a report summarizing all the options and making recommendations.



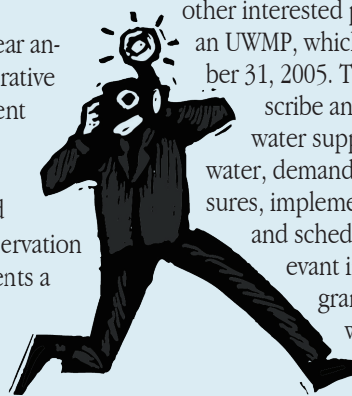
Please consider having a voice in the framing of a newly created national water use efficiency organization. A national organization could greatly benefit California by providing the support for needed product research and savings evaluation studies. Visit the Council's Web page on this project to fill out a survey form and to register your views in the discussion forum. The Web site is accessible through the Council's main home page at [www.cuwcc.org](http://www.cuwcc.org). We'd like to hear from you!

### *Mission Accomplished!*

*By Katie Shulte Joung*

May 1, 2005, marked the three-year anniversary of the landmark cooperative agreement among the Department of Water Resources, the U.S. Bureau of Reclamation, and the CALFED Bay-Delta Authority and the California Urban Water Conservation Council. This agreement represents a significant commitment to assist urban water agencies across California to achieve water use efficiency goals. Programs conducted with funding from DWR included providing technical assistance to water agencies on understanding the Council's memorandum of understanding (MOU), implementing the 14 Best Management Practices (BMPs), and using the BMP reporting Web site. The funding also supported maintenance and upgrades to the Council's Web site, the BMP reporting database, regular publication of the WaterLogue, and updating the Web site with new product information and other technical resources.

All of the Council's projects funded by DWR are now complete!



### **Development of a Water Savings Calculation Model**

A software program to estimate statewide water savings from BMP activities has been developed. This database relies on the data provided by water agencies on the implementation of quantifiable BMPs. The model also enables water suppliers to calculate their agency's water savings potential for use in program planning. Water savings estimates from 1991 through 2005, for all quantifiable BMPs are now readily available on the Council's Web site.

**UWMP Workshops** In early 2005, the Council hosted a series of 10 Urban Water Management Plan workshops throughout the State to assist urban water suppliers, consultants, planners and other interested parties in preparing an UWMP, which is due by December 31, 2005. The plan must describe and evaluate sources of water supply, efficient uses of water, demand management measures, implementation strategies and schedules, and other relevant information and programs. The workshops were designed to provide step-by-step guidance

and information on using DWR's Urban Water Management Plan Guidebook, new legislative requirements affecting the UWMP; using the DWR Review Sheets as a template; understanding the two mechanisms for reporting water conservation activities (Demand Management Measures and/or Best Management Practices); and streamlining the preparation of a Water Supply Assessment or Verification in accordance with Senate Bill 221 and Senate Bill 610 (Water Supply Planning).

**Revenue Impacts** In Fall 2004, the Council hosted workshops for water agency general managers, finance directors, rate managers, and other interested parties to provide information on manag-



## AGRICULTURAL WATER MANAGEMENT COUNCIL

ing revenue stability through rate design, the effect of pricing on water consumption and conservation, incorporating future capital investment in rate structure design, adaptive pricing benefits for drought management, equity versus efficiency, and the benefits to wastewater utilities in adopting a conservation oriented rate structure.

**Integrating Water Supply and Land Use Planning** In the Spring of 2004, the Council conducted workshops for water suppliers, land-use planners, engineers, consultants and other interested parties on the implementation of Senate Bill 221 and Senate Bill 221 (States of 2001). Using DWR's *Guidebook for Implementation of SB 221 and SB 610* as a resource, the workshops provided information on: integrating the legislative requirements of with the California Environmental Quality Act and the Subdivision Map Act process; and preparing a Water Supply Assessment or Verification; and using the Urban Water Management Plan as a source document.

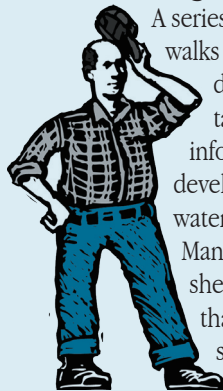
The Council was grateful for the funding from DWR to conduct these projects, which we believe will result in even greater urban water conservation efforts by California's water suppliers and should help water agencies meet the needs of our growing population while preserving important natural resources. Mary Ann Dickinson, Executive Director for the Council, expressed her enthusiasm for this unique partnership when she stated, "While the Council's projects for DWR are complete, we look forward to future partnerships to assist California in meeting its water use efficiency goals. We are committed to providing continued assistance to DWR and the water efficiency community."

For additional information on these projects visit the Council's Web site at [www.cuwcc.org](http://www.cuwcc.org).

### ***AWMC Web Site Offers Wealth of Information***

There are no flashing lights or stick-figures running across the computer screen to greet the visitor to the Agricultural Water Management Council's Web site. Instead, the Web site hosts a wealth of information designed to assist agricultural water district to evaluate and improve their water management. Especially helpful is the link from the Web site's home page that leads to assistance in formulating water management plans. Visit the Council Web site at [www.agwatercouncil.org](http://www.agwatercouncil.org) to find out how to access the following tools.

#### ***Planning worksheets***



A series of worksheets walks the water district representative through the information needed to develop an agricultural water management plan. Many of the worksheets include tables that individuals can simply add the information requested according to the plan guidelines.

#### ***Net Benefit Analysis***

Water suppliers can also find net benefit analysis software to evaluate their operations for improving efficiency. The Council provides an analytical framework for districts to evaluate the benefits and costs of implementing an efficient water management practice in their services area in order to best determine the

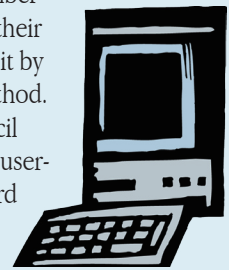
appropriate manner of implementation. The net benefit analysis takes into consideration the technical, environmental, socioeconomic, financial, and third party factors affected by water use efficiency activities.

#### ***Monitoring and Verification Procedures***

Low-cost monitoring and verification protocols are available to assist water suppliers in estimating the volume of water conserved by a water use efficiency project. The protocols include guidelines for how to identify both pre- and post-project conditions for the following water use efficiency project types: monitor canal lining and piping, drainage reuse, spillage reduction, and on-farm improvements.

#### ***BMP Reporting***

New to the Council Web site is a BMP reporting application for federal contractors to submit their reports online. Contractors can access the application from a secured location on the Council Web site with a username and password. The site is easy to navigate with a user-friendly interface. Users will be able to complete any number of the steps, save their work and retrieve it by a simple login method. Contact the Council office to receive a username and password to sample the Web site.



## ***New Water Recycling Projects Increase the State's Recycled Water Use***

*By Nancy King*

New phases of two recycled water projects are scheduled to come online this year and will ultimately augment our state water supplies. Both the San Gabriel Valley Water Recycling Project, Phase 2, and the Encina Basin Water Reclamation Program, Phase II together will supply 2,320 million gallons of recycled water annually for irrigation and other uses, freeing up the potable water for household needs.

### ***San Gabriel Valley Water Recycling Project***

Phase 2 of California's San Gabriel Valley Water Recycling Project, scheduled to be in operation by September 2005, will supply approximately 2,646 acre-feet per year (approximately 860 million gallons annually) of recycled water to customers. The project consists of constructing:

- a pump station adjacent to the treatment plant and
- a distribution pipeline system.

The Upper San Gabriel Valley Municipal Water District is building the distribution facilities and will wholesale the recycled water to the local water purveyor, who will in turn retail the recycled water to various customers. Recycled water will be used in place of using groundwater at the Whittier Narrows Recreation area - a large county park - as well as other customer locations.

The recycled water will be piped from the Los Angeles County Sanitation Districts' Whittier Narrows Water Reclamation Plant. This plant can produce up to 15 million gallons per day (mgd) of tertiary treated water. Phase 1 of the project consisted of extending distribution facilities from the Central Basin Municipal Water District's recycled water system to serve 1,800 acre-feet per year, or 590 million gallons, from the Sanitation Districts 100 MGD San Jose Creek WRP, to Rio Hondo College, Mill Elementary School and Rose

Hills Memorial Park. This initial phase began delivering recycled water in June 2003.

The \$9 million project is being funded by the USGVMWD, the U.S. Bureau of Reclamation, and the Metropolitan Water District of Southern California, as well as a potential State Board Proposition 50 grant. USGVMWD has contracted with a private



*Visitors learn about the Los Angeles County Sanitation Districts' Whittier Narrows Water Reclamation Plant*

company to design and manage construction of the facilities, and with San Gabriel Valley Water Company to operate and maintain the distribution system. The San Gabriel Valley Water Recycling Project is part of the ongoing efforts of the Sanitation Districts and its water purveyor partners to recycle as much of the recycled water from its water reclamation plants as possible. For more information about the Project, contact Earle C. Hartling, Water Recycling Coordinator for Los Angeles County Sanitation Districts, at (562) 699-7411, ext. 2806 or email [ehartling@lacsds.org](mailto:ehartling@lacsds.org).

### ***Encina Basin Water Reclamation Program, Phase II Project***

The City of Carlsbad's Encina Basin Water Reclamation Program, Phase II Project will supply 4.0 mgd of recycled water for irrigation freeing up drinking water supplies previously used for irrigation.

The Carlsbad Water Recycling Facility is the first of the four major components that make up the Phase II Project. This facility will process 4.0 mgd of recycled water to an advanced tertiary treatment level that meets State Health Department's requirements for recycled water suitable for body contact. The facility can be expanded, through future phases, to produce 16.0 mgd.

The second component of Phase II is to construct the distribution system--over 24 miles of pipelines. David Ahles, Senior Civil Engineer of the City of Carlsbad, says pipelines will serve two hundred potential customers in the Carlsbad Research Park, as well as homeowners' associations. The third component is the construction of three new Recycled Water Pump Stations that will pump a combined flow of over 17,000 gallons per minute through the distribution system to provide irrigation water to the City. The fourth and final component of Phase II consists of water quality improvements to a recycled water storage reservoir. The Phase II Project - recycled water plant, pipelines, pumping stations and the reservoir work - is expected to cost \$45 million and is scheduled to be completed spring 2006, with water deliveries beginning summer 2005.

Phase II expands the recycled water distribution system constructed as part of the Phase I Project completed in 1997. Ahles says the City of Carlsbad's Phase I has been a great success. Currently, the approximately 26 miles of existing pipeline supplies recycled water to 58 outdoor landscape irrigation use sites including La Costa Resort and Spa, Four Seasons Resort Aviara, LEGOLAND California, Grand Pacific Palisades Hotel, and the world-renowned Flower Fields, as well as parks, median strips, shopping areas, freeway landscaping and numerous homeowners' associations. At the completion of Phase II, the Carlsbad Municipal Water District will be able to supply 25 percent of the entire city's water needs with recycled water.



For more information contact David Ahles, City of Carlsbad, at (702) 602-2748 or email [dahle@ci.carlsbad.ca.us](mailto:dahle@ci.carlsbad.ca.us).

## California Recognizes Desalination as Potential Water Supply Option

### DWR awards \$25 Million in Water Desalination Grants

By Fawzi Karajeh and Fethi Benjema

Desalination is gaining considerable attention from scientists, resource planners, policy-makers, and other stakeholders. The main driving force for this renewed interest in water desalination is the remarkable technological advancement in processes which has recently led to a much lower cost of desalinated water.

Worldwide, 2.4 billion people (39 percent of world population) live in coastal areas. In the United States, 54 percent of the population lives in coastal regions and the percentage is increasing. Currently, there are over 13,600 desalination units across 120 countries producing over 32 million cubic meters (8.4 billion gallons) of fresh water each day (BGD), of which 4 billion gallons a day is in the United States. This 4 BGD is less than 1 percent of the fresh water used in the United States. Worldwide, the 8.4 billion gallons supplied through desalination accounts for only 3 percent of global drinking water.

The California Department of Water Resources – within the framework of its mission of managing the water resources of the State – provides desalination technical and financial assistance as an important and developing water supply strategy.

**2003:** DWR convened the California Water Desalination Task Force under Assembly Bill 2717. The Task Force was formed to look into opportunities and impediments for using brackish water and oceanwater desalination in California, and to examine what role the state should play in furthering the use of desalination technology. One of the primary findings is that eco-

nomically and environmentally acceptable desalination should be part of a balanced water portfolio to meet California's existing and future water supply and environmental needs. The California Water Desalination Task Force identified potential water supply benefits associated with the increased use of desalinated water, as well as the challenges facing California with large-scale desalination use.

**November 2002:** California voters passed Proposition 50, the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002. Chapter 6(a) of Proposition 50 allocates the sum of \$50 million for oceanwater and brackish water desalination projects grants. This grant program, administered by DWR, provides funding for construction projects, research and development, feasibility studies, and pilots and demonstration projects. The program assists local public agencies with the development of local water supplies through brackish water and seawater desalination.

**July 8, 2004:** DWR's Office of Water Use Efficiency and Transfers released a draft Proposal Solicitation Package (PSP) for public comments. DWR held two public workshops on August 12, 2004, in Northern California and August 17, 2004, in Southern California. The public comment period ended August 23, 2004.

**October 2004:** The California Bay-Delta Public Advisory Committee endorsed the PSP on October 14, 2004. On October 25, 2004, the final PSP was released and made available in hard copies and posted on the Web to accept proposals.

**November 15, 2004:** DWR conducted a Public Workshop for the Final PSP, and by January 13, 2005, the due date to submit applications, DWR received 42 eligible applications requesting \$71.3 million.

During the 2005 funding cycle, a sum of \$25 million was appropriated for funding brackish water and oceanwater desalina-

tion projects. Entities involved with water management activities were eligible to apply including cities, counties, joint power authorities, public water districts, universities and colleges, tribes, non-profit organizations, watershed management groups, state agencies and federal agencies.

After receiving the 42 eligible applications, a Desalination Review Panel was formed to help the State review the applications based on the criteria set forth in the PSP. The Desal Review Panel, comprised of members representing local, state, and federal agencies as well as other stakeholders, evaluated the proposals in relation to the seven criteria established in the PSP. Detailed scoring sheets were provided to each reviewer. Panel members submitted their individual draft scores and comments for the proposals they reviewed. Then on March 24, 2005, the Desal Review Panel met and ranked eligible projects for the different project categories: research and development, feasibility studies, pilots and demonstrations, and constructions.

**March 25, 2005:** A Desalination Funding Agency Team was appointed by the Department and included representatives from DWR, Department of Health Services, Energy Commission, and U.S. Bureau of Reclamation. The Desalination Funding Agency Team reviewed the scores and the ranking recommend by the Desalination Review Panel and made its recommendation to the DWR. DWR issued a Draft Staff Funding Recommendation on March 30, 2005.

**April 12, 2005:** DWR conducted a public workshop to provide information about the Draft Funding Recommendation, announce the projects recommended for funding, and review the award contracting process. DWR also opened a comment period on the Staff Funding Recommendation until April 19, 2005.

**April 14, 2005:** DWR submitted the Staff Draft Funding Recommendation to the joint meeting of the California Bay Delta Authority and the Bay-Delta Public

*Continued on Page 12*





## WATER CONSERVATION NEWS

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*Address Correction Requested*

### **Desalination** *from Page 11*

Advisory Committee. The Authority, via its resolution 05-04-07, recommended the Department of Water Resources proceed with the Proposition 50 Water Desalination Grants, 2005 Cycle Staff Recommended Projects.

Based on the review process, DWR has decided that the available \$25 million under this Desalination grant cycle be used to fund 25 different projects including: 3 constructions, 6 pilots and demonstrations, 7 research and development projects, and 9 feasibility studies. These funding awards provide 54 percent of the fund to brackish water desalination projects and 46 percent to ocean desalination projects with a statewide geographically balanced distribution.

With these funding awards, the State of California is funding well-documented desalination construction projects with high potential of success. The State is partially funding the construction projects

as ranked in the top three by the Desal Review Panel and recommended by the Proposition 50 Desal Agency Team. This funding will create a new water source from unusable ocean and brackish groundwater to meet current or future water shortages through which will create regional and statewide benefits.

All applicable laws, Proposition 50 provisions, and concerns will be addressed before the implementation of the awarded projects. This process allows the State to have access to data, knowledge, and experience gained as a result of the awarded projects and makes knowledge available for other potential projects. The State can support feasible desalination projects while working toward meeting water supply benefits projected by the California Desalination Task Force and the 2005 California Water Plan Update.

The number of funded projects was increased by lowering the level of funding

for construction projects. As a result, two additional pilot projects (brackish water and oceanwater desalination) were added, which are expected to provide local agencies and the State with valuable information for informed decisions. These funding awards are consistent with principles outlined in the PSP process of encouraging the development of all practical desalination technologies and both brackish and ocean desalination feedwater sources.

Summaries, charts, and details on the 25 awarded projects are available on the Water Recycling and Desalination web site: <http://www.owue.water.ca.gov/recycle/DesalPSP/DesalPSP.cfm>. A map of the geographical locations of the funding awards is available at: [www.owue.water.ca.gov/recycle/DesalPSP/MapDesalFundingDistribution.JPG](http://www.owue.water.ca.gov/recycle/DesalPSP/MapDesalFundingDistribution.JPG).

CATEGORY	<i>Funded Projects</i>				
	FUNDED / TOTAL	COST	REQUESTED	GRANT	STATE SHARE
Construction	3 / 8	\$104,359,043	\$15,000,000	\$8,930,744	9%
Pilot and Demonstration	6 / 14	\$26,438,272	\$10,474,232	\$7,974,516	30%
Research and Development	7 / 11	\$13,804,295	\$6,004,746	\$6,004,746	43%
Feasibility Studies	9 / 9	\$4,437,061	\$2,089,994	\$2,089,994	47%
<b>Total</b>	<b>25 / 42</b>	<b>\$149,038,671</b>	<b>\$33,568,972</b>	<b>\$25,000,000</b>	<b>17%</b>